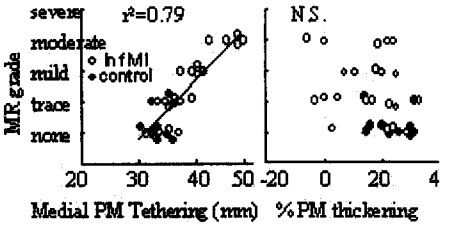
eral pts had moderate MR despite normal thickening. 2) MR was correlated with LV and annular dilatation, reduced EF, and increased tethering, with the strongest independent contribution by multivariate analysis from increased medial PM tethering.
Conclusions: Ischemic MR is independent of PM dysfunction but is related to geometric changes with medial PM tethering from LV remodeling in patients with inferior MI.



1012-136 **End-Systolic Left Ventricular Diameter ≥ 45 mm in Mitral Regurgitation Is an Insensitive Marker of Left Ventricular Dysfunction and a Poor Predictor of Postoperative Outcome**

Maurice Enriquez-Sarano, Michael F. Bellamy, Thomas A. Orszulak, Hartzell V. Schaff, *Mayo Clinic, Rochester, Minnesota.*

Background: Left ventricular end-systolic diameter (LVS) has been touted as a good indicator of left ventricular (LV) dysfunction in mitral regurgitation (MR). Recent ACC/AHA guidelines recommend that LVS ≥ 45 mm be used for indication of surgery for MR. However, this recommendation is based on limited evidence and its appropriateness is uncertain.
Methods: We studied 676 consecutive patients who had LVS measurement prior to valve repair (447) or replacement for chronic mitral valve regurgitation; operations were performed between 1980 and 1995, and postoperative echocardiograms were available in 589 patients.
Results: Comparing the 116 (17%) patients with preoperative LVS ≥ 45 mm to the 560 (83%) with LVS < 45 mm, age (63 ± 12 vs. 64 ± 14, P =0.54) and prevalence of class III-IV (57 vs. 53%, P =0.51) were not different. However, males (78 vs. 57%, P <0.0001) were over-represented and ejection fraction (EF) was lower (49 ± 10 vs. 64 ± 8%, P <0.0001). For outcome, with preoperative LVS ≥ 45 mm, operative mortality was borderline higher (6 vs. 3%, P =0.14), 15-year survival was lower (22 ± 7 vs. 38 ± 4%, P =0.007) and 15-year incidence of heart failure was higher (40 ± 7 vs. 30 ± 4%, P =0.0002). However, in multivariate analysis of survival and heart failure, LVS ≥ 45 mm did not reach statistical significance (both P >0.33) while EF remained independently predictive (P =0.02 and P <0.001). Postoperative LV dysfunction (EF < 50%) was noted in 95 patients (64%) with LVS ≥ 45 mm and in 130 (26%) with LVS < 45 mm (P <0.001). After repair, LV dysfunction was noted in 60% and 23% of patients with and without LVS ≥ 45 mm (P <0.001) and in 38% of patients with LVS 40-45 mm.
Conclusions: These data suggest that the recommendation that surgical correction of MR be performed when LVS is ≥ 45 mm should be reconsidered. The criterion is rarely observed in clinical practice, particularly in women, is a poor predictor of outcome, and LVS ≥ 45 mm preoperatively is associated with substantial rates of postoperative LV dysfunction. We do not advocate use of this criterion as a guide for intervening in patients with MR and believe that optimal survival and functional status is achieved by early operation for patients with severe MR documented by quantitative methods.

POSTER SESSION

1035 Challenges in Coronary Bypass Surgery

Sunday, March 17, 2002, Noon-2:00 p.m.
Georgia World Congress Center, Hall G
Presentation Hour: 1:00 p.m.-2:00 p.m.

1035-131 **Coronary Artery Bypass Grafting in Patients With Dialysis-Dependent End Stage Renal Disease: A Nested Case-Control Study**

Kevin L. Powell, J. Michael Smith, Scott E. Woods, Mary Pat Hendy, *Good Samaritan Hospital, Cincinnati, Ohio, Bethesda Family Medicine Residency, Cincinnati, Ohio.*

Background - To prospectively assess if there are any outcomes differences for patients on dialysis for chronic renal failure (CRF) who are undergoing coronary artery by-pass surgery (CABG).
Methods - We conducted a nested case-control study. Cases and controls came from a eight-year, prospective hospitalization cohort (N=5324). Inclusion in the cohort included CABG between 10/93 and 2/01 and age greater than eighteen. Exclusion criteria include any simultaneously performed surgery with CABG. Data were collected on 140 variables concurrently with admission by physicians, nurses and perfusionists. Cases were defined as patients on dialysis for CRF undergoing CABG (N=28). Each case was matched with three controls. Cases and controls were matched on four variables: age, gender, smoking history, and New York Heart Association Functional Classification. Controls were defined as patients not on dialysis undergoing CABG (N=84). The ten outcomes of interest were mortality, intensive care unit length of stay, total length of hospitalization, time on the ventilator, wound complications, pulmonary and neurological complications, gastrointestinal complications, arrhythmia, and intraoperative complications. Using logistic regression we controlled for thirteen potential confounding variables: race, hypertension, diabetes, chronic obstructive pulmonary disease, prior myocardial infarction, body surface area, hypercholesterolemia, left ventricular hypertrophy, character of operation, bleeding history, previous cardiac surgery, pulmonary hypertenion, and current vascular disease.
Results -There were no significant differences between cases and controls for seven of the eight outcomes of interest including mortality (RR=0.97, 95% CI 0.23-4.01). Patients on dialysis had a significantly longer hospital stay. They stayed 21% longer than their matched controls(RR=1.21 95% CI 1.05-1.38).
Conclusion - Patients on dialysis for CRF undergoing CABG surgery stay significantly longer in the hospital compared to non-dialysis patients. Other outcomes, including mortality, show no significant difference after controlling for multiple risk factors.

1035-132 **Multiple Arterial Grafts Improved Survival Following Coronary Bypass Surgery**

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Background: The use of the left internal mammary artery (LIMA) as a conduit during coronary artery bypass graft surgery has been shown to improve outcomes over use of saphenous vein grafts (SVGs). The use of Multiple Arterial grafts is becoming more common, although the long-term mortality benefits over that achieved with the use of LIMA are uncertain.
Objective: To evaluate long-term outcome following coronary artery bypass graft surgery using: all SVGs, or a single LIMA with SVGs, or Multiple Arterial grafts during long-term follow up.
Methods: A large prospectively collected comprehensive database was utilized to evaluate consecutive patients who underwent coronary artery bypass grafting. All patients who underwent a concommitant procedure such as valvular surgery, carotid surgery, etc. were excluded. Consecutive patients were utilized and regular prospectively collected follow up was obtained. The national death index was used for assessment of mortality status.
Kaplan-Meyer analysis was used to construct survival curves. A proportional hazards analysis was used to identify independent predictors of mortality.
Results: A total of 2,967 patients were studied who underwent coronary artery bypass grafting between 1995 and 2000. Average follow up was approximately 30 months; mortality follow up was 99% complete. Patients in SVG group were older, had higher heart failure and angina functional scores and worse left ventricular function compared to the LIMA and Multiple Arterial groups.
Kaplan-Meyer survival was superior for the LIMA and Multiple Arterial groups at 24 months (SVG=87%, LIMA=95%, Multiple Arteries=98%). The differences continued to widen at 38 months. To account for differing demographics in the groups, a multi-variable analysis was performed. This identified Multiple Arteries and LIMA to be both independent predictors of improved survival time during follow up. Other predictors of mortality include creatinine > 1.5 mg/dL, age, diabetes and congestive heart failure.
Conclusion: Long term survival following bypass grafting is best with Multiple Arterial grafts, intermediate for LIMA with SVGs, and worst with all SVGs.

1035-133 **Emergent and Urgent Coronary Surgery After Attempted Percutaneous Coronary Intervention (PCI): An Analysis of the NHLBI Database in the Era of Stents**

John T. Schindler, David O. Williams, David R. Holmes, Janet Johnston, Katherine M. Detre, Howard A. Cohen, *CVI and GSPH University of Pittsburgh, Pittsburgh, Pennsylvania.*

Background: Prior to the widespread use of stents, acute complications related to PCI frequently required coronary bypass surgery. The purpose of this study was to determine the need for emergent or urgent coronary bypass surgery after failed PCI in the current stent era.
Methods: The National Heart, Blood and Lung Institute's Dynamic Registry database of 4,564 patients undergoing PCI at sixteen different medical centers was analyzed by combining two different waves of enrollment (July 1997-Feb 1998 – Feb 1999-June 1999). Thirty-seven (0.81%) patients were identified as requiring urgent or emergent coronary surgery after PCI. Upon review of the catheterization films, twenty-six (0.57%) patients fulfilled the criteria of undergoing failed PCI requiring subsequent coronary bypass surgery. Patients were categorized according to the need for emergent/urgent surgery as well as calculating outcome event rates for the patients requiring emergent/urgent surgery as compared to those with successful PCI.
Results: The reason for requiring bypass surgery of the twenty-six patients were as follows: 1.) Thirteen patients with large coronary dissections not amenable to correction with stenting, 2.) Seven patients with total occlusions preventing successful passage of a guide wire and ongoing ischemia, 3.) Three patients with distal embolization and persistently reduced coronary flow, 4.) Two patients with coronary perforation, and 5.) One patient with stent dislodgment from the balloon into the left main coronary artery. Patients who required emergent/urgent surgery had a higher mortality (11.1% vs. 1.4% P<0.001), and an increased combined endpoint of death/nonfatal MI (18.5% vs. 4.0% p<0.001).
Conclusions: Complications related to PCI that require emergent/urgent bypass surgery are relatively uncommon. Despite the widespread availability of coronary stenting, however, one-half of the patients who required emergency surgery were secondary to large dissections that were judged to be too complex for percutaneous treatment. PCI should be performed at centers with on-site cardiothoracic surgery availability in order to facilitate emergency surgical intervention.